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Miscellanea Herpetologica Gabonica XV

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Abstract

We present new Gabonese locality records, ecological and morphological data and unpublished material for *Pelusios gabonensis* (Pelomedusidae), *Kinixys erosa* (Testudinidae), *Hemidactylus mabouia* (Gekkonidae), *Lepidothyris striatus*, *Trachylepis affinis* (Scincidae), *Crotaphopeltis hotamboeia*, *Dipsadoboa underwoodi* and *D. viridis* (Colubridae), *Dendroaspis jamesoni*, *Naja annulata annulata*, *N. melanoleuca* and *N. nigricollis* (Elapidae), *Atractaspis boulengeri*, *Limaformosa savorgnani*, *Polemon fulvicollis*, *Psammophis mossambicus* (Lamprophiidae) and *Natriciteres fuliginoides* (Natricidae). One skink and two snake species are newly recorded from Haut-Ogooué and Ngounié provinces, respectively. We attribute all records of *Psammophis* spp. in Gabon to *P. mossambicus*. We report a case of predation by a Common chimpanzee (*Pan troglodytes*) on *Kinixys erosa* in Lopé National Park, by *Crotaphopeltis hotamboeia* on the Cameroon toad *Sclerophrys camerunensis* (Anura: Bufonidae), and by a *Naja annulata annulata* on Thollon's robber tetra *Brycinus tholloni* (Characiformes: Alestidae).

Keywords

Biodiversity, herpetofauna, Squamata, Testudines, bifid tail, chimpanzee, fish, prawn, protected areas, Gabon, Equatorial Africa.

Introduction

We continue our series *Miscellanea Herpetologica Gabonica*, initiated in 2008, and aiming at increasing the knowledge on the natural history and geographical distribution of the reptiles of Gabon. Most of the specimens presented in this volume were obtained during non-herpetological activities, encountered as dead-on-road individuals, or killed by villagers or fishermen. Some observations were made during ichthyological (LC), parasitological (LB and BN) and primatological (KAA) field studies. Others are unpublished outcomes of intensive herpetological studies in Haut-Ogooué in 2016–2018 (SM) and long-term surveys in Estuaire and Ogooué-Ivindo provinces (see among others Carlino and Pauwels, 2015, and Pauwels, Braun et al., 2017).

Material and Methods

Photographic and voucher material was identified using the keys and morphological information provided by Pauwels and Vande weghe (2008) and Wagner et al. (2009). Snake ventral scales were counted according to the method of Dowling (1951). Snake dorsal scale rows were counted at one head length behind head, at midbody (above the ventral corresponding to half of the total number of ventrals), and at one head length before vent; subcaudal counts exclude the terminal pointed scale. Paired meristic characters are given left/right. Morphological data of preserved specimens are presented in Table 1.

Abbreviations: Morphology: A = anal plate; AT = anterior temporals; DSR = number of dorsal scale rows; IL = number of infralabials, followed in brackets by the number of IL in contact with the first pair of sublinguals; K = keeled; Lor = number of loreal scales; PoO = number of postoculars; PreO = number of preoculars; PV = number of preventrals; SC = number of subcaudals; SL = supralabials, followed in brackets by the SL in contact with orbit; SubO = subocular; SVL = snout–vent length; TaL = tail length; U = unkeeled; VEN = number of ventral scales. Varia: alt. = altitude; Dept = Department; NP = National Park; Prov. = Province; PEM R = Port Elizabeth Museum (reptile collection), Humewood, South Africa; RBINS = Royal Belgian Institute of Natural Sciences, Brussels, Belgium; RMCA = Royal Museum for Central Africa, Tervuren, Belgium.

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Figure 1. Live adult *Pelusios gabonensis* (ventral view) in Disofou, Nyanga Prov., southwestern Gabon. Photograph by Christophe Ngokomaka.

Results

Testudines
Pelomedusidae
Pelusios gabonensis (Duméril, 1856)
An adult individual was photographed in January 2018 by Christophe Ngokomaka in Disofou (2°52'59.0"S, 10°28'00.0"E), Basse-Banio Dept, Nyanga Prov. (Figure 1). New locality record. Within this dept, this species had already been recorded from Banio Lagoon (Maran and Pauwels, 2005).

Testudinidae
Kinixys erosa (Schweigger, 1812)
In 2000 KAA observed a female Common chimpanzee **(***Pan troglodytes***)** who had found a live *Kinixys erosa* in the *Station d'Etude des Gorilles et Chimpanzés* (SEGC), Lopé NP, Lopé Dept, Ogooué-Ivindo Prov., in central Gabon. The female was with a group but made no vocalization to attract other members. She climbed a tree carrying the tortoise in one hand and sat herself in a fork about 8 m high, where she could see the other group members on the ground, but they could not access her easily, so it seems that she did not intend to share the meat, and knew that the other chimpanzees would want to take some. She used her fingers to pull the legs from the tortoise, twisting each leg off and eating it. She then broke a small branch from the tree and used two sticks from it to poke into the opening where the head would come out and to force the shell apart. She then managed to pull the head out and off and to get her fingers into the broken opening to eat more of the inner meat. All this she did in silence and very fast, to not attract the attention of the others. However, she was then noticed and a young male climbed up behind her. She dropped the shell and went higher into the tree, clearly not wanting to be chased or punished for having the meat. Pika et al. (2019) were the first to publish observations of predation by Common chimpanzees on tortoises. Their observations involved the same tortoise species, but in Loango NP, southwestern Gabon.

Figure 3. Live adult *Kinixys erosa* near Pana, Ogooué-Lolo Prov., southern-central Gabon. Photograph by B. Ngoubangoye.

Figure 2. Live adult female *Kinixys erosa* (dorsal view) near Akoumassi, Woleu-Ntem Prov., northern Gabon. Photograph by L. Boundenga.

In February 2016, LB photographed an adult female *Kinixys erosa* in Akoumassi (1°4'59''N, 11°28'59''E), Woleu Dept, Woleu-Ntem Prov. (Figure 2). New locality record; a few other records had previously been made in the surroundings of Oyem (Maran and Pauwels, 2005). In February 2018, BN encountered an adult individual in Pana (1°41'00.0"S, 12°39'00.0"E), Lombo-Bouenguidi Dept, Ogooué-Lolo Prov. (Figure 3), in the heart of the Chaillu Massif, about 20 km N of the border with the Republic of Congo. New locality record; from this dept, the species was already recorded from Koulamoutou (Maran and Pauwels, 2005). In March 2018, LB photographed an adult female nearby Mafouka (0°46'00.0"N, 12°58'00.0"E) along Zadie River, Ivindo Dept, Ogooué-Ivindo Prov. (Figure 4). New locality record. Several localities were already known within this dept (Maran and Pauwels, 2005). While this tortoise species is currently one of the most ubiquitous and most often documented reptiles of Gabon, it suffers everywhere from heavy hunting. It was reported from many localities throughout the country, but only a fraction of these records was vouchered by photographs or museum specimens.

Figure 4. Live adult female *Kinixys erosa* (dorsal view) near Mafouka, Ogooué-Ivindo Prov., northeastern Gabon. Photograph by L. Boundenga.

Figure 5. Live adult *Hemidactylus mabouia* with a bifid regenerated tail in Bakoumba, Haut-Ogooué Prov., southeastern Gabon. Photograph by S. Morelle.

Squamata
Gekkonidae
Hemidactylus mabouia (Moreau de Jonnès, 1818)
On 4 October 2016 SM photographed in Bakoumba (ca. 1°49'43.5"S, 13°00'08.7"E), Lékoko Dept, Haut-Ogooué Prov., an adult individual with a bifid regenerated tail (Figure 5). The species was already known from that locality (Pauwels, Morelle et al., 2019). It is the first record in Gabon of this anomaly of tail regeneration in Gekkonidae.

Scincidae
Lepidothyris striatus (Hallowell, 1854)
On 17 October 2018 LB photographed a freshly dead adult individual which had been killed by a gardener while it was basking on a house terrace in the compound of the CIRMF in Franceville, Passa Dept, Haut-Ogooué Prov. (Figure 6). New prov. record for the genus. In Gabon, this colorful but elusive species had so far been recorded from the provinces of Estuaire, Moyen-Ogooué, Ogooué-Ivindo and Ogooué-Maritime (Pauwels and Vande weghe, 2008; Wagner et al., 2009; Carlino and Pauwels, 2015), and it is most certainly present, but still undocumented, from Nyanga, Ogooué-Lolo and Woleu-Ntem provinces.

Trachylepis affinis (Gray, 1839)
The adult individual MSNS 279 was collected on 15 August 2012 in Mabounié, 40 km E-SE of Lambaréné, Ogooué & Lacs Dept, Moyen-Ogooué Prov. It shows a SVL of 80 mm, a TaL of 160 mm (tail original); supranasals not in contact but separated only by a point; prefrontals not in contact with each other; parietals in contact behind interparietal; 7/7 SL; 4/4 supraoculars; 6/6 supraciliaries; 32 MSR; three keels per dorsal scale. New locality record (reptile records for this dept were compiled by Pauwels, 2017).

Colubridae
Crotaphopeltis hotamboeia (Laurenti, 1768)
An adult White-lipped cat snake (RBINS 19196) was found dead-on-road in 2011 in Kanda (2°12'9.8"S, 11°31'45.2"E), Louetsi-Wano Dept, Ngounié Prov. It shows three pairs of sublinguals. New dept record (Pauwels and Vande weghe 2008). Its stomach contains the remains (posterior legs in good condition, anterior part of body mostly digested) of a subadult

Figure 6. Freshly dead adult *Lepidothyris striatus* in Franceville, Haut-Ogooué Prov., southeastern Gabon. Photograph by L. Boundenga.

Sclerophrys camerunensis (Parker, 1936) (Anura: Bufonidae), ingested head first (identification of the toad confirmed by comparison with the subadult specimen RBINS 13321 from Loango NP in southwestern Gabon).

Dipsadoboa underwoodi Rasmussen, 1993
The adult Underwood's tree snake RBINS 19197 was found in Bilolo (Ndoubi; 2°4'45.9"S, 11°35'47.5"E), Boumi-Louetsi Dept, Ngounié Prov. It shows two pairs of sublinguals; 1+3+3 temporals on the left side, 1+2+3 on the right side. New prov. record (not recorded from the province by Pauwels and Vande weghe, 2008; Pauwels, Le Garff et al., 2016).

Dipsadoboa viridis (Peters, 1869)
An adult individual (RBINS 19184) was found dead on road at the eastern exit (1°54'32.1"S 11°55'31.8"E) of Mbigou, Boumi-Louetsi Dept, Ngounié Prov. It shows a temporal formula of 1+2 on each side, and two pairs of sublinguals, the anterior one slightly larger and longer than the posterior one. New locality record (the species was already known from other localities in the district, see Pauwels, Kamdem Toham et al., 2002; Dewynter et al., 2018).

Elapidae
Dendroaspis jamesoni (Traill, 1843)
An adult mamba was killed by villagers in Mimongo (1°49'4.5"S, 10°56'39.3"E; alt. 92 m asl), Tsamba-Magotsi Dpt., Ngounié Prov. with a machete. Only the head and neck could be preserved (RBINS 19183). On 4 November 2017, in the same dept, LC found a dead-on-road individual on the N1 Road near Mimongo (1°49'4.5"S, 10°56'39.3"E; alt. 92 m asl). New dept record (not recorded by Pauwels, Kamdem Toham et al., 2002; Pauwels and Vande weghe, 2008). On 26 January 2012 LC examined an adult dead-on-road individual in Tchad (0°52'51.5"S, 10°23'41.2"E; alt. 60 m asl), Ogooué & Lacs Dept, Moyen-Ogooué Prov. New locality (Pauwels, 2017). On 6 April 2012 LC examined an individual killed by villagers in Nombakélé (0°45'21.1"S, 10°21'39.5"E; alt. 50 m asl), Ogooué & Lacs Dept, Moyen-Ogooué Prov. New locality (Pauwels, 2017). In the same dept, LC saw on 13 May 2012 an individual crossing the trail to Maboumine (0°51'20.7"S, 10°25'59.0"E; alt. 95 m asl). New locality record. On 9 August 2017, while traveling by boat from Omboué to Port-Gentil, LC photographed an adult individual climbing into a palm tree on the bank of the

Figure 7. Adult *Dendroaspis jamesoni* climbing on a palm tree on the bank of the Ogooué River in Etimboue Dept, Ogooué-Maritime Prov. Photograph by L. Chirio.

Ogooué River (1°19'36.7"S, 9°05'34.0"E; alt. one m asl; Figure 7) in Etimboue Dept, Ogooué-Maritime Prov. New dept record. On 28 December 2017 LC saw an individual crossing the road (0°21'30.9"N, 10°23'30.2"E; alt. 157 m asl) to Violaineville, in the SEEF logging concession, Komo Dept, Estuaire Prov. New locality record; within Estuaire Prov., this snake was known from a single locality so far (Pauwels, Chirio et al., 2017), also at direct proximity to Crystal Mounts NP where the species is not yet recorded (Pauwels, 2016). On 9 July 2019 LC examined a dead-on-road individual in Bembikanni (0°57'26.4"S, 12°48'24.3"E; alt. 544 m asl), Mouloundou Dept, Ogooué-Lolo Prov. New locality record. Although it is a large and easily recognizable venomous snake, the distribution of Jameson's mamba in Gabon is still poorly documented.

Naja annulata annulata Buchholz & Peters in Peters, 1876
The preserved head (RMCA A1-090-R-0003; see Figure 8) reported by Pauwels, Gillet et al. (2018) from Mboumi (0°23'42.0"S, 10°49'00.0"E), Abanga-Bigné Dept, Moyen-Ogooué Prov. was actually collected in Toho forest river (0°28'12.0"N, 12°05'30.0"E), Mvoung Dept, Ogooué-Ivindo Prov., and belonged to the fishing net-drowned individual illustrated by Pauwels, Gillet et al. (2018: Fig. 9). Jean-François Gillet had made a *lapsus calami* when indicating the locality at the time of the deposition of this specimen to the RMCA (J.-F. Gillet, comm. pers. to OSGP, August 2018). On our request, the correction of the locality was made in the RMCA herpetological register (Danny Meirte, curator of the RMCA herpetological collections, pers. comm. to OSGP).

Figure 8. Preserved head of an adult *Naja annulata annulata* (RMCA A1-090-R-0003) from Toho river, Ogooué-Ivindo Prov., northeastern Gabon. Photograph by O. S. G. Pauwels.

The subadult individual RBINS 19180 was killed by fishermen in Dibouangui (2°06'40.6"S, 11°35'11.7"E; alt. 377 m asl), Boumi-Louetsi Dept, Ngounié Prov. Its stomach contains an adult Thollon's robber tetra *Brycinus tholloni* (Pellegrin, 1901) (Characiformes: Alestidae; RBINS 25687), ingested head first. The tetra had a total length of 96 mm, and contained itself the remains of a freshwater prawn (Crustacea: Palaemonidae: *Macrobrachium*). *Brycinus tholloni* is an uncommon Lower Guinea endemic fish found in the upper Ogooué and Nyanga basins in southern Gabon and in Kouilou basin in the Republic of Congo (Paugy and Schaefer, 2007; Moelants, 2010). New dept record; within Ngounié province, this aquatic cobra was only recorded from Ogoulou Dept (Pauwels and Lavoué, 2004). It is the third known locality within the Chaillu Massif (Dewynter et al., 2018; Pauwels, Kamdem Toham et al., 2002).

Naja melanoleuca Hallowell, 1857
In their review of the *Naja melanoleuca* species complex, Wüster et al. (2018) listed a tissue sample (voucher WW2873 - PEM R 16698) from "Ayol Alar, Ogooué-Ivindo Province" used for their molecular analyses, and provided a photograph of an adult individual from "Tsibilé." The latter individual is the same individual illustrated under a different angle by Pauwels, Gillet et al. (2018: Fig. 10)

Naja nigricollis Reinhardt, 1843
Pauwels, Morelle et al. (2019) recorded this spitting cobra from Léconi Park in Plateaux Dept, Haut-Ogooué Prov. based on a photograph of an adult individual taken on 15 December 2016 by E. Pendrié in a savanna area. This highly venomous savanna species had been reported only twice before from Gabon, based only on an unvouchered observation from Nyanga Prov. and on a photograph taken in Haut-Ogooué Prov. (Pauwels and Vande weghe 2008; Pauwels, Carlino et al., 2017). However, due to editorial constraints, the photograph documenting this third Gabonese record could not be presented by Pauwels, Morelle et al. (2019). We thus present it here (Figure 9). It would be important to collect and examine Gabonese individuals to confirm their exact identity.

Figure 9. Live adult *Naja nigricollis* in defensive posture in Léconi Park, Haut-Ogooué Prov., southeastern Gabon. Photograph by E. Pendrié.

Lamprophiidae

Atractaspis boulengeri Mocquard, 1897

The juvenile MSNS-REPT 281 was collected along the entrance road to Ipassa Research Station, Ivindo Dept, Ogooué-Ivindo Prov., on 21 November 2016. It was found at 6 PM under a fallen tree trunk in secondary forest. It shows a slender habitus, round pupils, divided nasals; 2 internasals; 2 prefrontals; on each side a temporal formula of 1+3; 2nd IL not fused with sublinguals; a single pair of sublinguals. Its umbilical scar is still visible on VEN 184-186. This uncommon species was known from Loa Loa in the buffer zone of Ivindo National Park (Carlino and Pauwels, 2015), but the present record is the first one from the park's core area.

Limaformosa savorgnani (Mocquard, 1887)

An adult individual was killed with a machete by a villager in a savanna area in Guidouma (1°42'20.3"S, 10°46'36.7"E; alt. 103 m asl), Tsamba-Magotsi Dept, Ngounié Prov. Only the head and neck, in poor condition, could be preserved (RBINS 19185). It shows a double keel on the vertebral row. New locality. This uncommon and poorly known species had already been once recorded from this Dept by Dewynter et al. (2017).

Polemon fulvicollis (Mocquard, 1887)

An adult (RBINS 19181) was found dead on a laterite road (1°54'1.6"S, 11°54'52.6"E) at the southern exit of Mbigou, Boumi-Louetsi Dept, Ngounié Prov. It shows a temporal formula of 1+1 on each side, and two pairs of sublinguals, the anterior one much wider and longer than the second one. New prov. record. In Gabon, this rarely encountered species was known only from the provinces of Haut-Ogooué, Ogooué-Ivindo and Ogooué-Lolo (Pauwels and Vande weghe, 2008; Pauwels, Carlino et al., 2016).

Psammophis mossambicus Peters, 1882

All *Psammophis* samples from Gabon used in the revision by Trape et al. (2019) turned out to be referable to *P. mossambicus*. No morphological or genetic differences between Gabonese populations have been recorded. All records of this genus from Gabon, made under *Psammophis phillipsii*, *P.* cf. *phillipsii* and *P. sibilans* (Kelly et al., 2008; Pauwels and Vande weghe, 2008 and references therein; Pauwels, Le Garff et al., 2016; Pauwels, 2017; Pauwels, Albert et al., 2017; Pauwels, Biyogho Bi Essono II et al., 2017; Pauwels, Gillet et al., 2018; Pauwels, Oger et al.,

Table 1. Morphological data for snakes. NA = not available. For the other abbreviations see Materials and Methods.

Species and collection number	SVL (mm)	TaL (mm)	DSR	PV+VEN	A	SC	SL	IL	Lor	PreO	SubO	PoO	AT
Colubridae													
Crotaphopeltis hotamboeia													
RBINS 19196	364	67	17-19-15, U	1+160, U	S	44, D, U	8(3-5)/8(3-5)	9(5)/9(5)	1/1	1/1	0/0	3/3	1/1
Dipsadoboa underwoodi													
RBINS 19197	390	119	17-17-13, U	1+190, U	S	79, S, U	9(4-6)/8(3-5)	9(4)/10(4)	1/1	1/1	0/0	2/2	1/1
D. viridis													
RBINS 19184	728	237	17-17-13, U	2+229, U	S	100, S, U	8(4-5)/8(4-5)	10(5)/11(6)	1/1	1*/2	0/0	2/1	1/1
Elapidae													
Dendroaspis jamesoni													
RBINS 19183	NA	NA	17-NA-NA, U	1+>37, U	NA	NA	7(4)/7(4)	8(4)/8(4)	0/0	3/3	1/1	2/2	1/1
Naja annulata annulata													
RBINS 19180	509	108	25-23-17, U	0+227, U	S	70, D, U	7(3-4)/7(3-4)	8(4)/8(4)	0/0	1/1	0/0	2/2	1/1
Lamprophiidae													
Atractaspis boulengeri													
MSNS-REPT 281	197	19	21-21-16, U	2+200, U	S	1D+5S+19D, U	5(3-4)/5(3-4)	6(3)/6(3)	0/0	1/1	0/0	1/1	1/1
Limaformosa savorgnani													
RBINS 19185	NA	NA	18-NA-NA, K	1+>27, K	NA	NA	7(3-5)/7(3-5)	NA	1/1	NA	0/0	2/2	1/1
Polemon fulvicollis													
RBINS 19181	339	22	15-15-15, U	4+255, U	D	24, D, U	7(3-4)/7(3-4)	7(4)/7(4)	0/0	1/1	0/0	1/1	1/1
Natricidae													
Natriciteres fuliginoides													
RBINS 19186	223	149	17-17-15, U	2+124, U	S	94, D, U	8(4-5)/8(4-5)	10(5)/9(5)	1/1	1/1	0/0	3/3	1/1

* On the left side, the lower preocular is fused with the loreal and is not counted.

2018; Pauwels, Morelle et al., 2019) are consequently referred here to *P. mossambicus*, the only species of the genus currently known to occur in the country.

On 14 July 2019, on the R16 road in Kellé I (1°36'45.6"S, 13°43'44.5"E; 413 m asl) between Franceville and Bongoville, Mpassa Dept, Haut-Ogooué Prov., LC examined a dead-on-road individual. New locality record (Pauwels, Morelle et al., 2019).

Natricidae
Natriciteres fuliginoides (Günther, 1858)
An adult individual (RBINS 19186) was found in Oyane (0°10'59.0"S, 9°19'1.0"E; alt. 8 m asl), Komo-Océan Dept, Estuaire Prov. It shows on both sides a temporal formula of 1+2+3. This new locality is situated at proximity to Wonga-Wongué Presidential Reserve, from where the species is not yet recorded (Pauwels and Vande weghe, 2008; Pauwels, 2016), but where it is certainly present.

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